

CRANBOP®
Lightning Suppressor

The new standard in lightning strike prevention!
DESTRUCTIVE

CAMPUS ENERGY

UNTIL NOW!

EMP | DEFENSE

CampusEnergyLightningPrevention.com

The Problem With Lightning

Electrical Infrastructure

- 35% — Annual lightning related power outages exceeding \$1 Billion in losses.

Source: Ralph Bernstein, EPRI

- 19% — Nuclear power plant safety activations initiated by lightning.

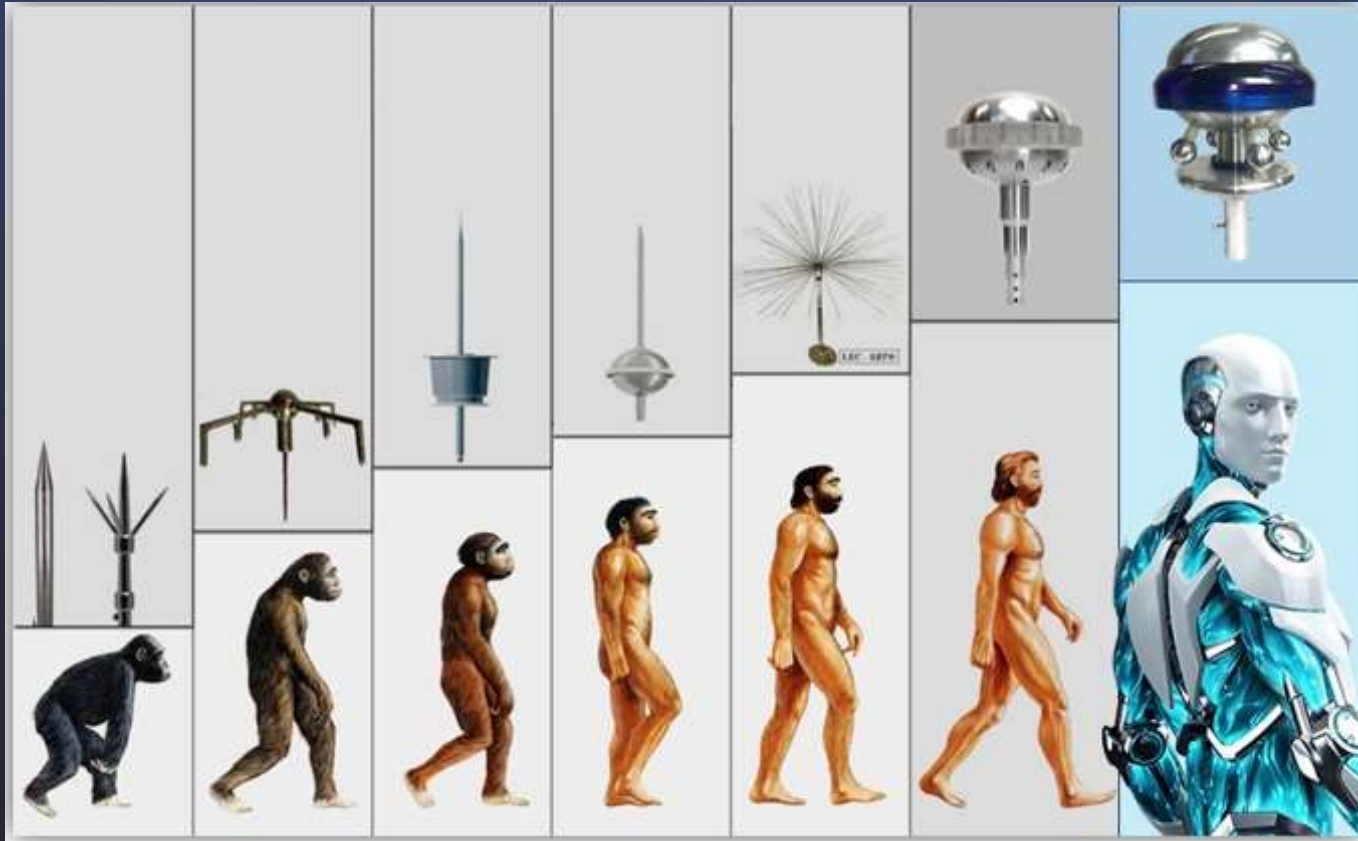
Source: U.S. Nuclear Regulatory Commission.

Franklin Rods Designed To Take a Strike!

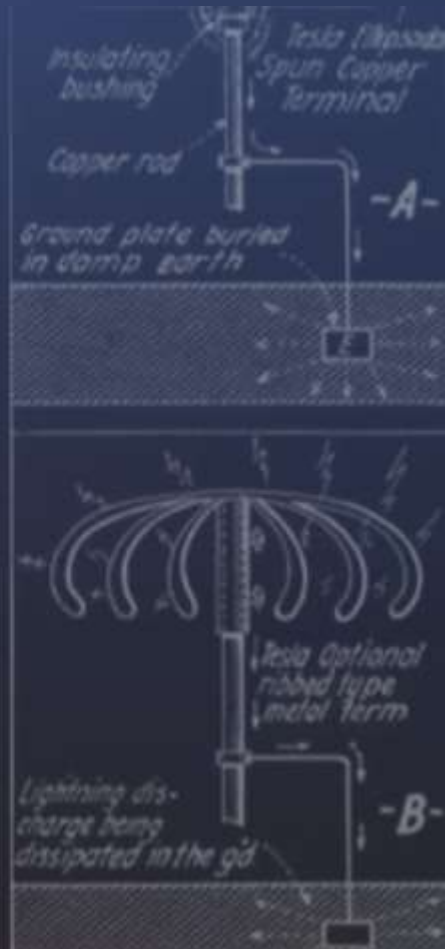


\$5 Billion+ — Total insurance losses due to lightning strikes reported in 2006.
Source: TMCNet Newsletter, 2006

Evolution of Lightning Protection Systems



Inspired By Dr. Nikola Tesla

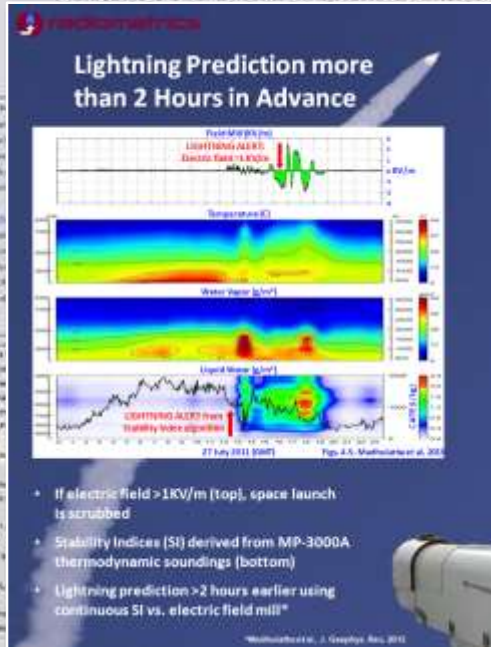


Completely random and unpredictable?

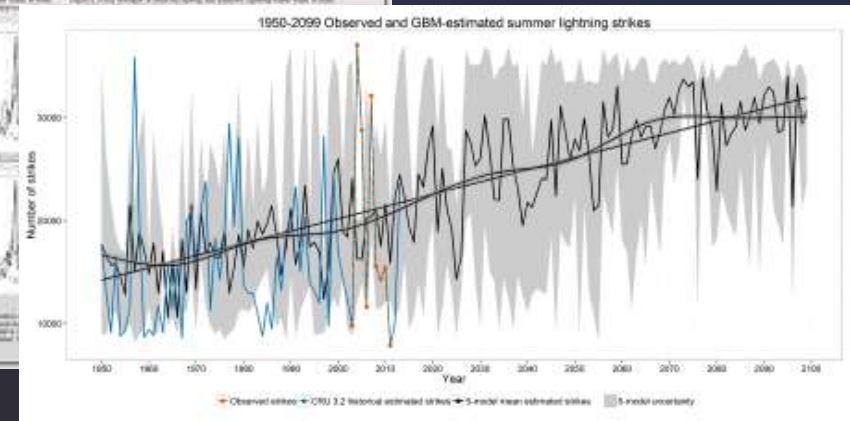
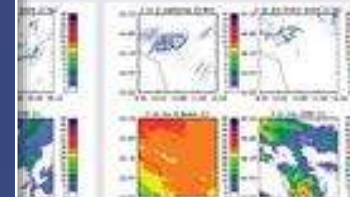


Predicting lightning density in Mediterranean storms based on the WRF model dynamic and microphysical fields

AE31A-0258



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The Solution

CMCE[®] 120

Lightning Suppressor

The new standard in lightning strike prevention!



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Product Specifications

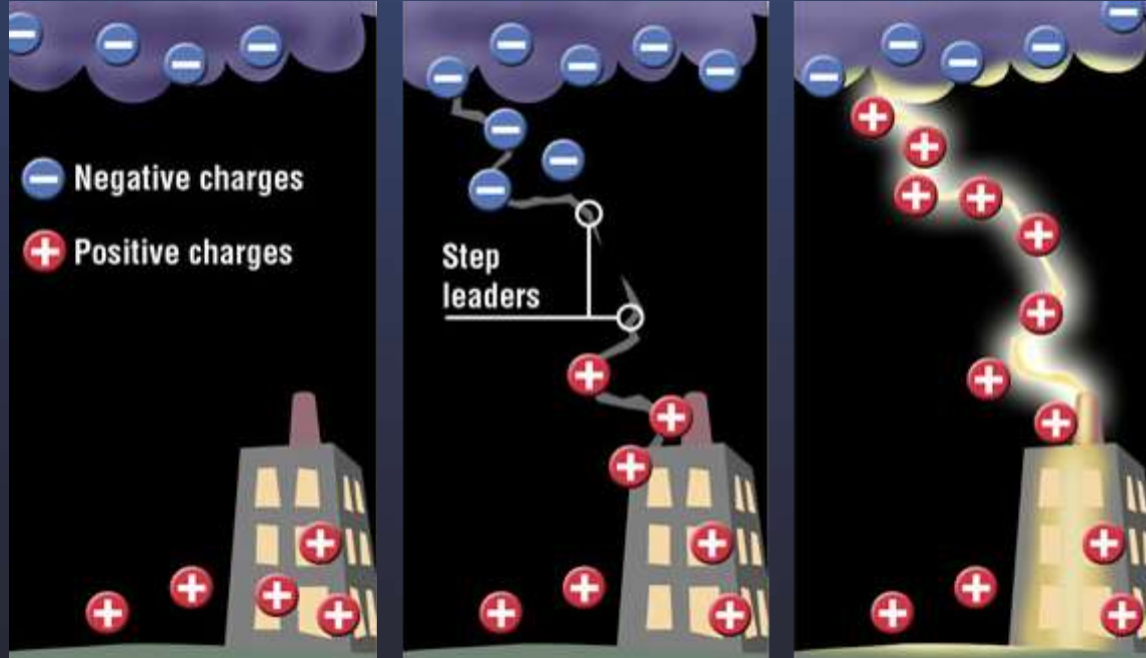
Product Distinctions



At-Risk Critical Assets



The Development of Lightning



Operating Principles

Negative Charges

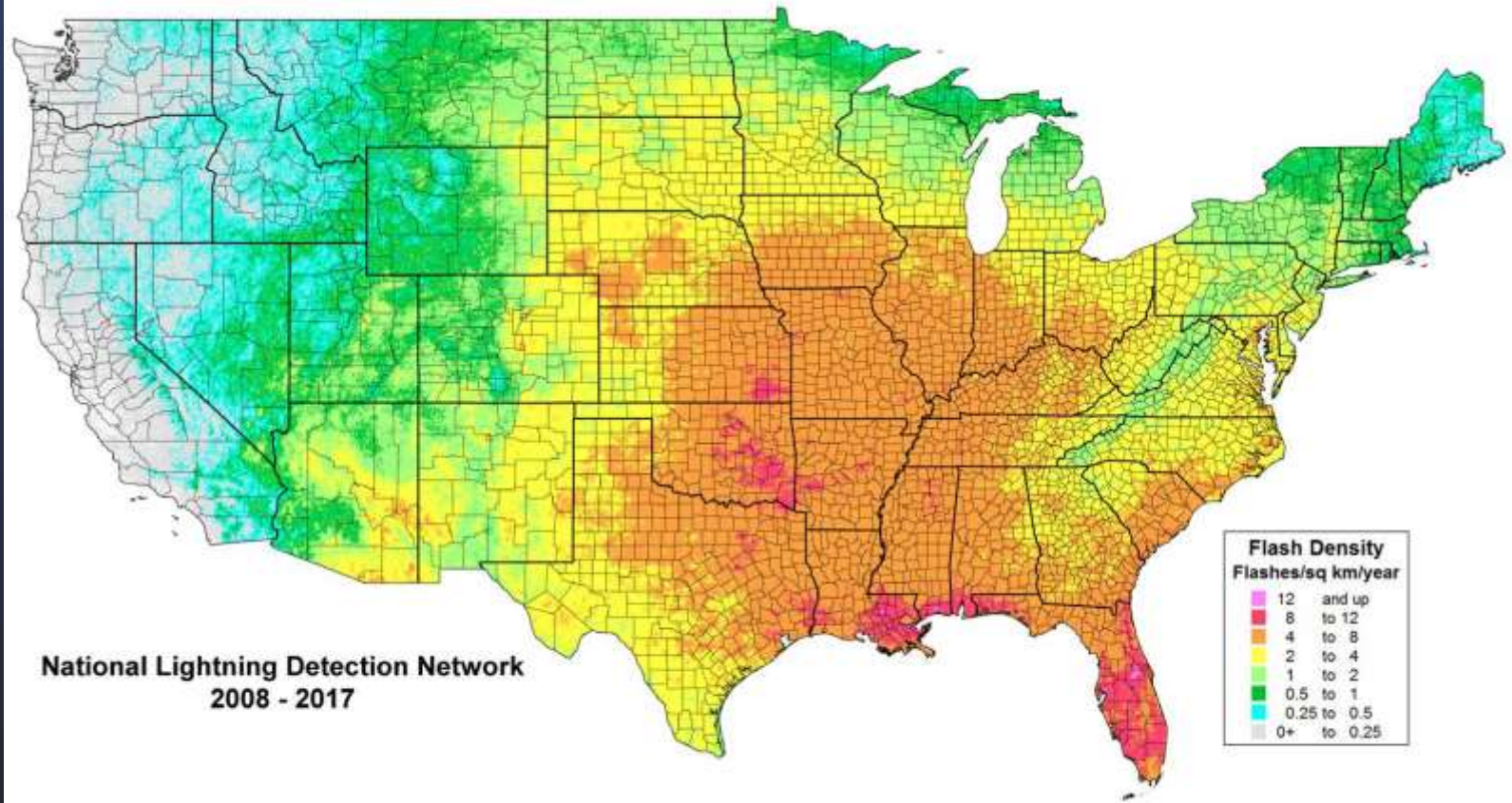
Potential Difference

Positive Charges

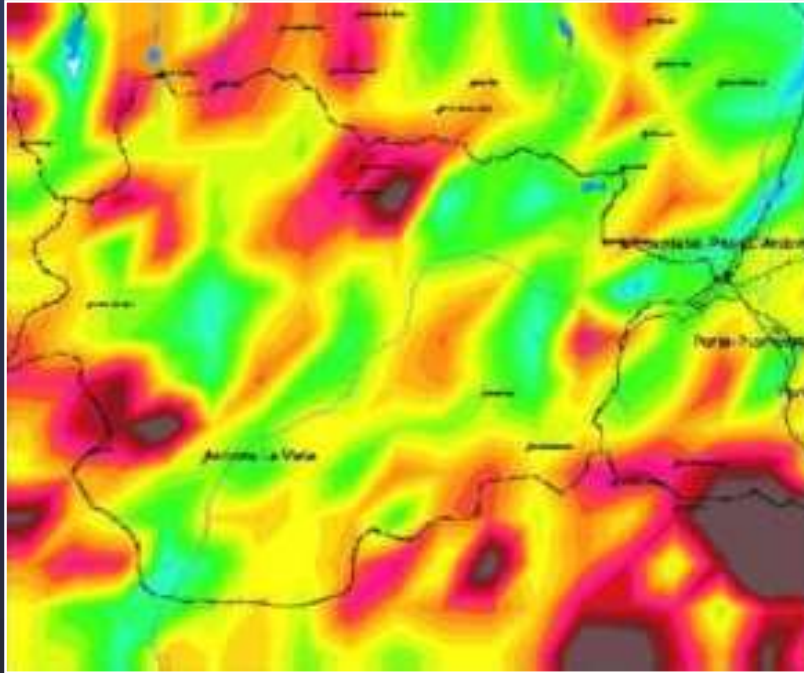


Access Energy is down streamed
harmlessly into the ground

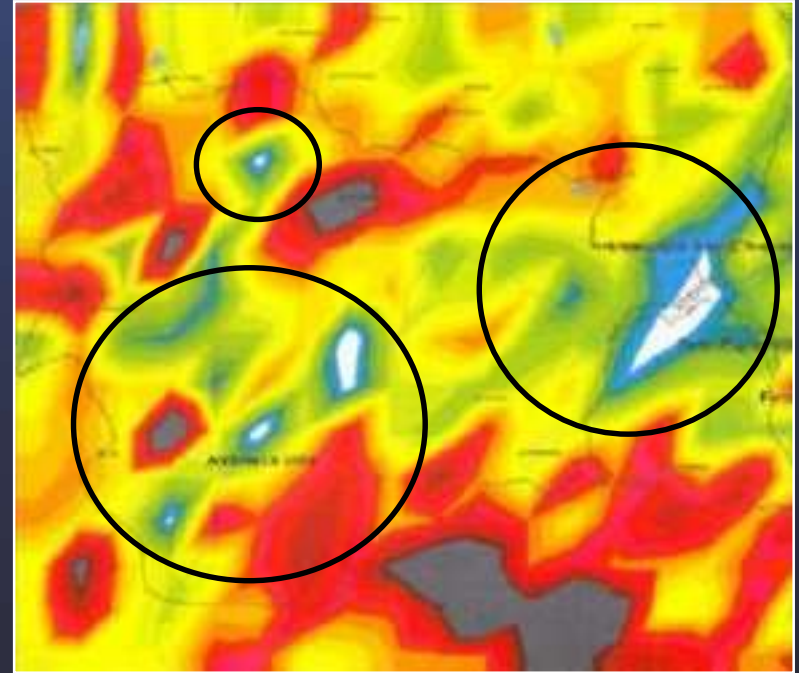
2008 – 2017 Lightning Concentration



Before & After Lightning Concentration



1997 – 2002
Unprotected



2003 – 2008
Protected

Project Profile

Dearborn Industrial Generation Facility

Background

- Plant Services Ford Motor & AK Steel Plants
- 2016 – Lightning Strike to Plant Substation
- \$400,00 damage
 - Repairs
 - Preventative Maintenance
 - Purchased power to maintain service levels

Project Profile

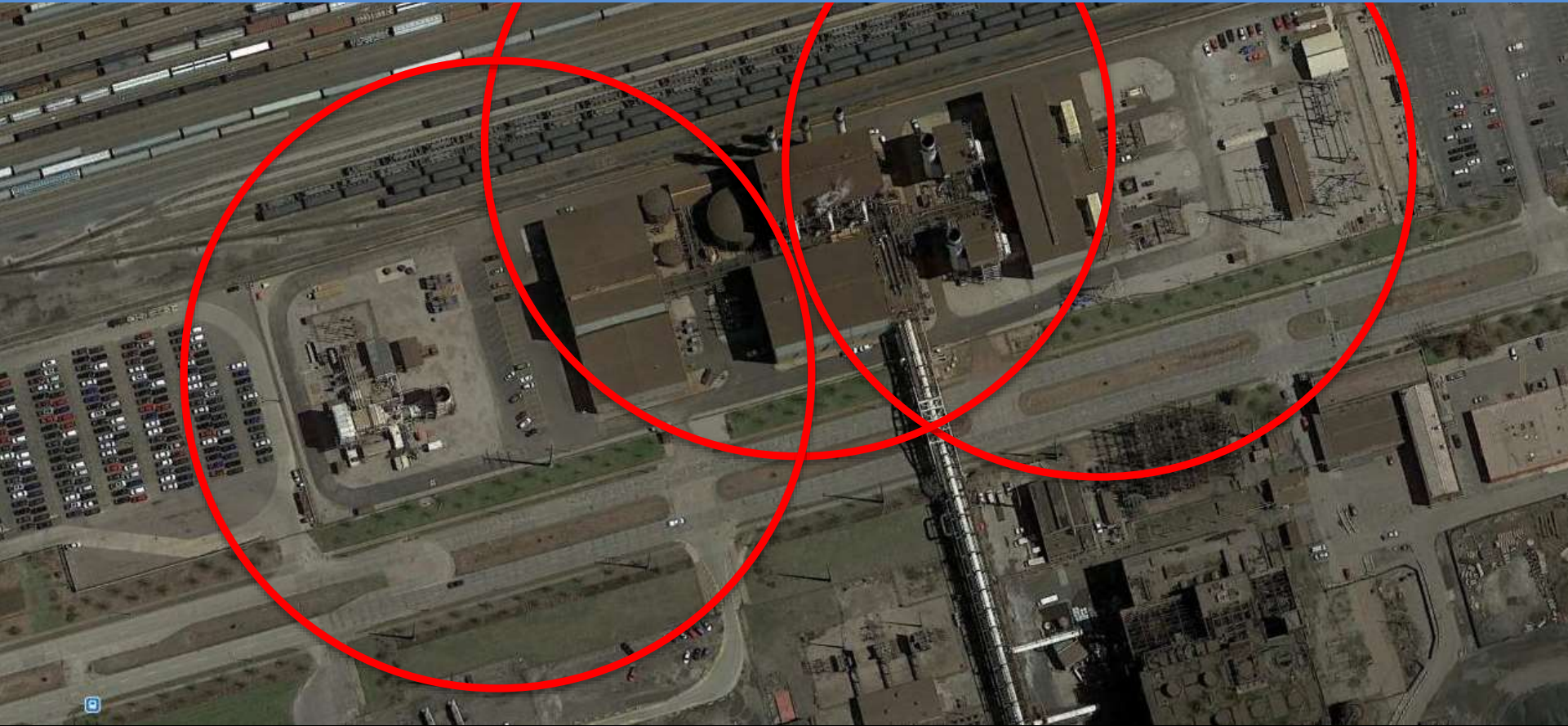
Dearborn Industrial Generation Facility

2016 Lightning Strike Area

Dearborn Industrial Generation

Project Profiles

Dearborn Industrial Generation Facility



Project Profiles

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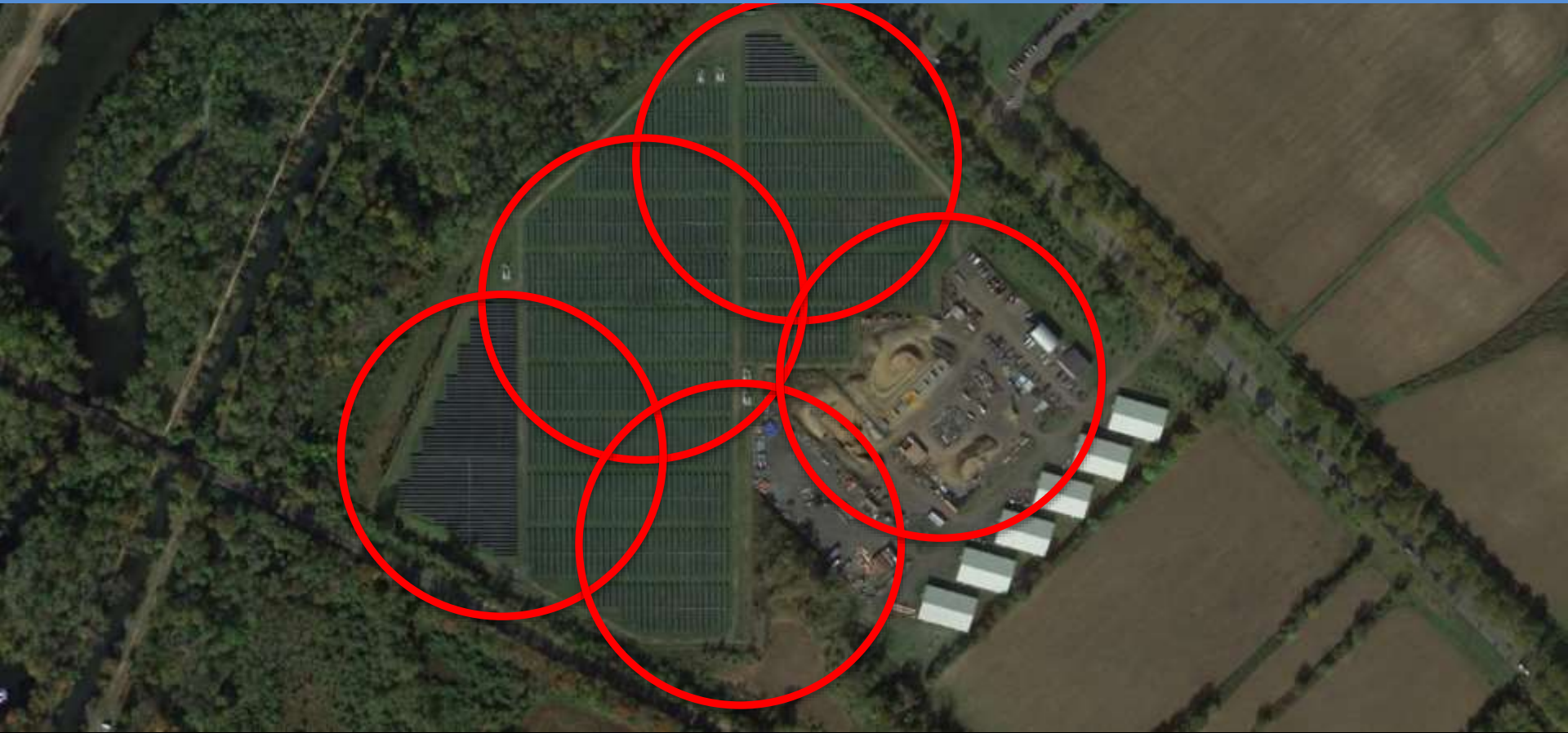
Project Profiles

Dearborn Industrial Generation Facility



Microgrid Conceptual Coverage Illustrations

Princeton University Solar Power Grid



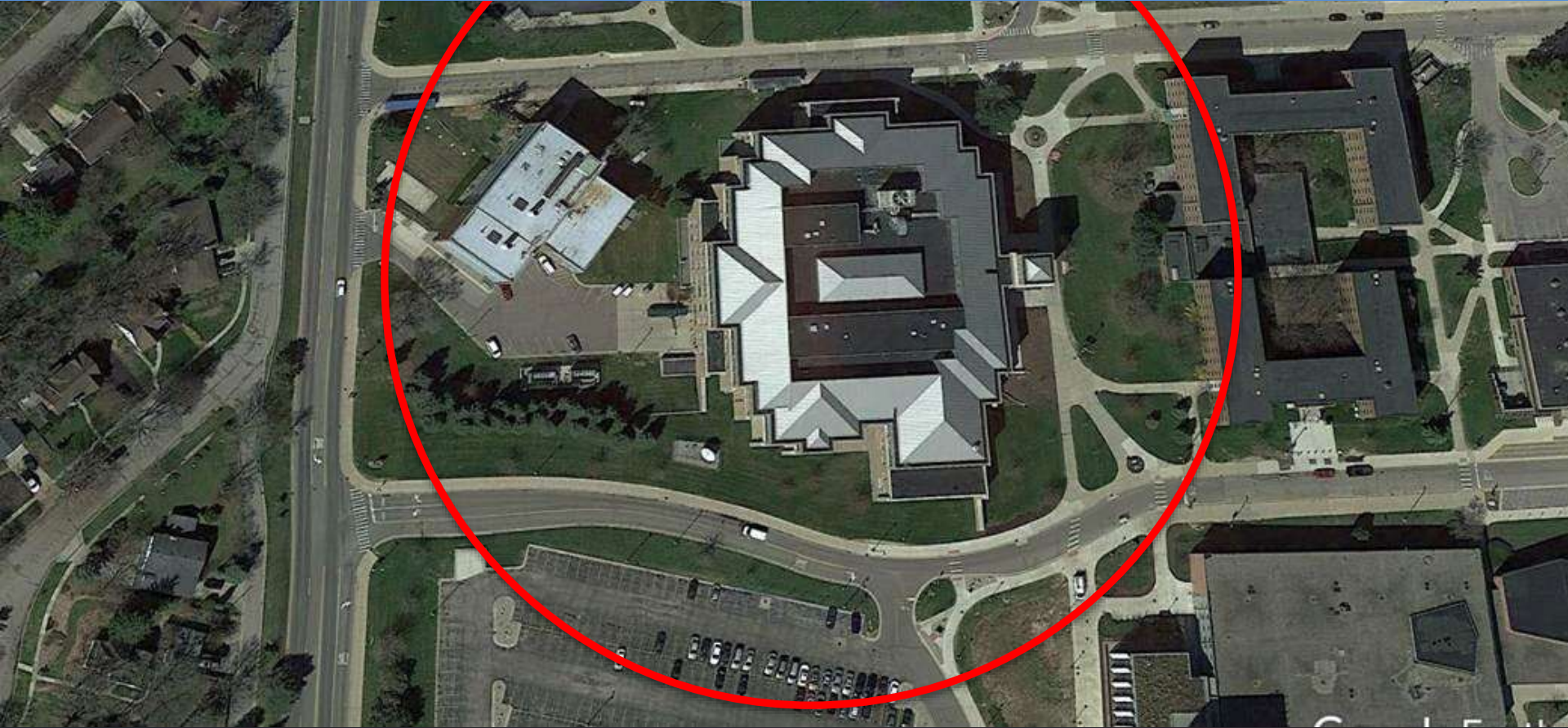
Microgrid Conceptual Coverage Illustrations

Cornell University Utilities



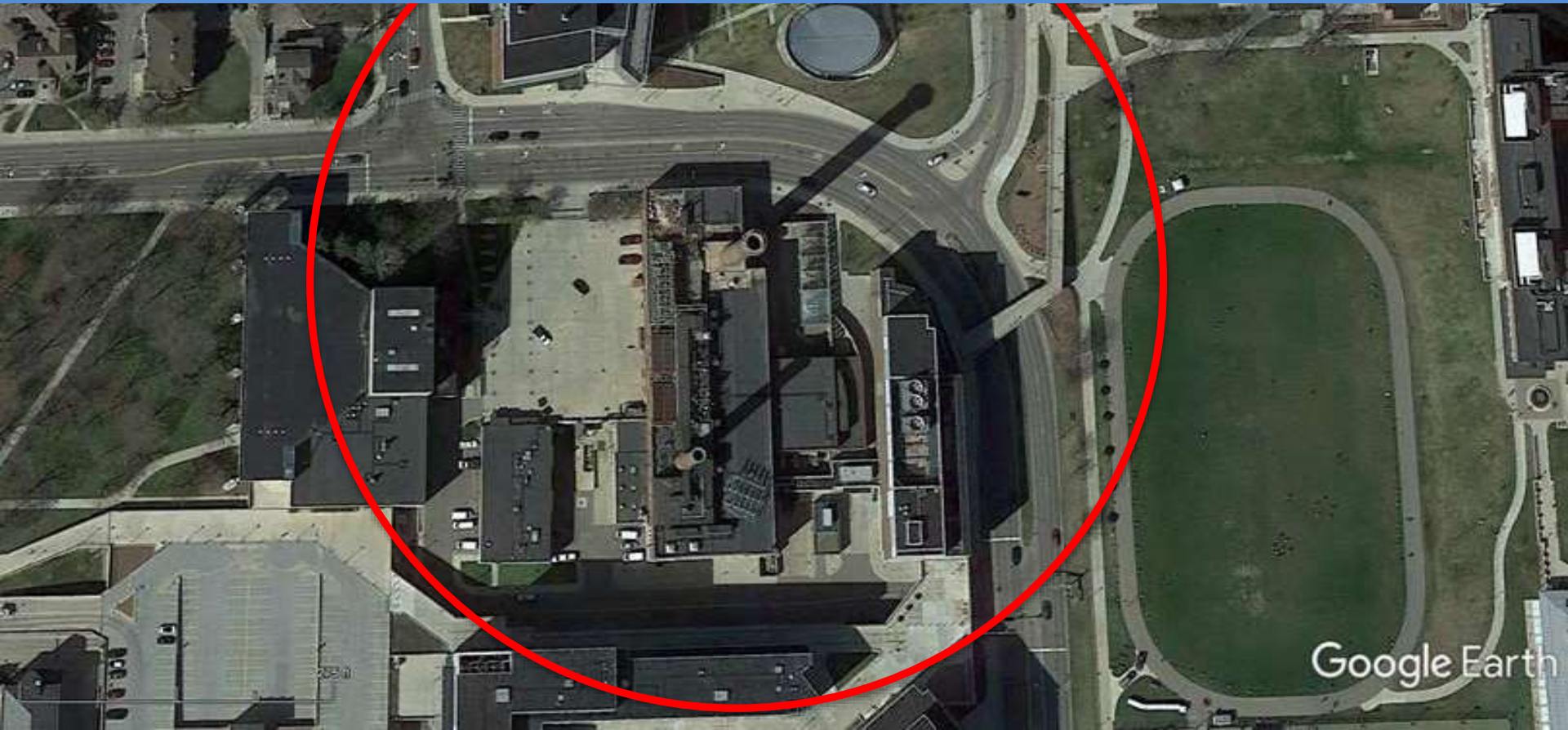
Microgrid Conceptual Coverage Illustrations

Eastern Michigan University COGEN Power Plant



Microgrid Conceptual Coverage Illustrations

University of Michigan Central Power Plant



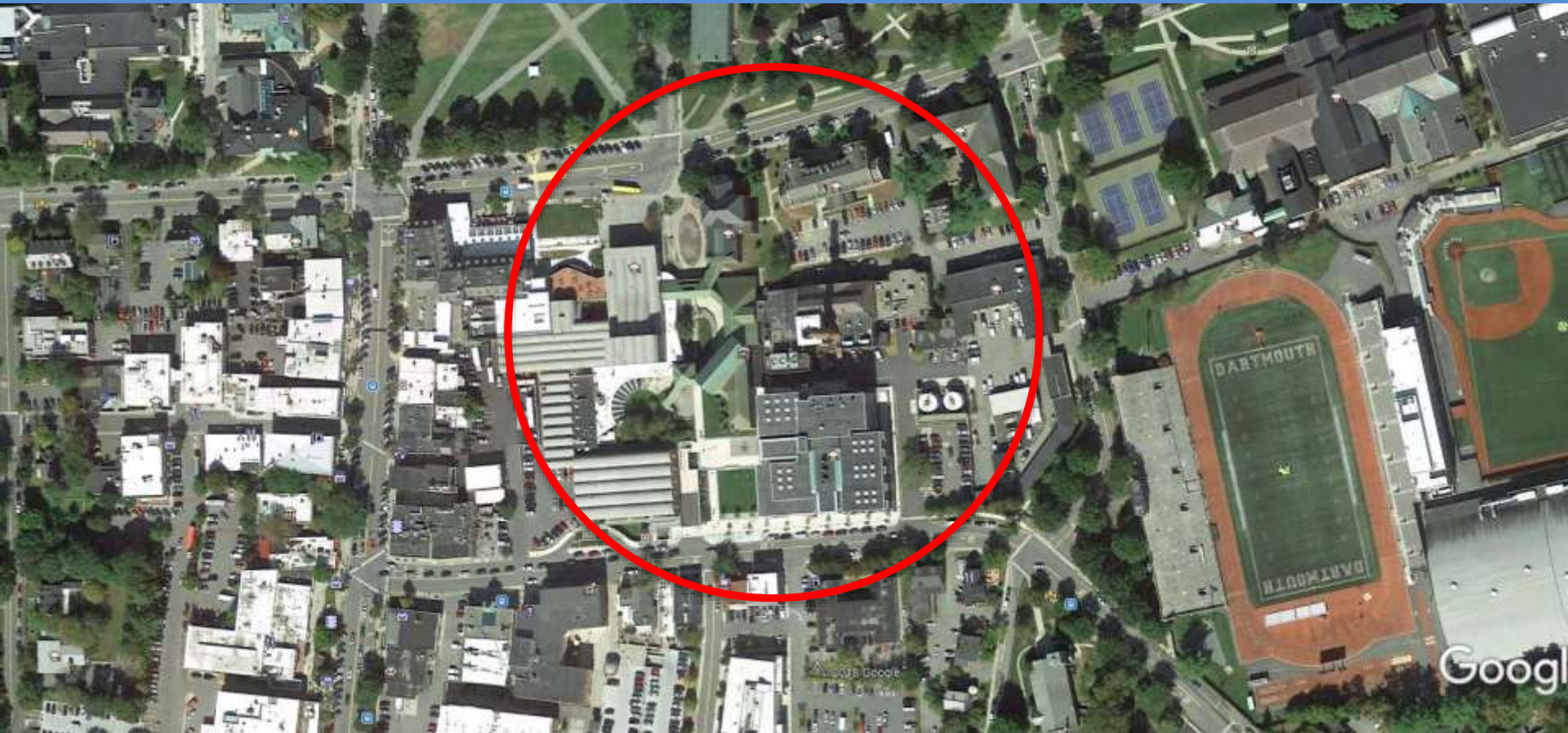
Google Earth

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Microgrid Conceptual Coverage Illustrations

Dartmouth College Power Plant



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Thank you!